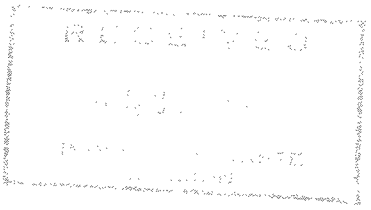


City of San Francisco
Soil Investigation Report

JAN 16th 1987
YOSEMITE FITCH.

Prepared by

ERM-West

January 1987

ERM-West
Environmental Resources Management

1777 Botelho Drive • Suite 260 • Walnut Creek, California 94596-5022 ☎ (415) 946-0455
4630 Campus Drive • Suite 200 • Newport Beach, California 92660-1805 ☎ (714) 852-9490
2865 Sunrise Boulevard • Suite 105 • Rancho Cordova, California 95670-6538 ☎ (916) 635-7766

Reply To:

Rancho Cordova

January 16, 1987

Mr. Steve Medberry
Division Engineer
Industrial Waste Division
750 Phelps Street
San Francisco, Ca 94124

Subject: Yosemite and Fitch Outfalls Consolidation Project: Soil Investigation Along the Route of Proposed Sewer Construction.

Dear Steve:

Enclosed are the results of the soil investigation for the subject project. Potential contamination of both soil and water has been found in various portions of the proposed sewer alignment. In the following paragraphs we will provide the background, a summary of the soil collection and analysis methodology, and recommendations for your review and consideration.

Background

In Attachment A is a letter, dated November 3, 1986, from ERM-West to the City of San Francisco, Department of Public Works, that summarizes the proposed workplan and describes the site history, analysis procedure and protocol. The soil investigation proceeded in accordance with the workplan with few exceptions. In some shallow, preliminary borings sampling with an organic vapor analyzer indicated the presents of organics and the borings were drilled deeper and samples were taken for analysis.

Soil Sampling and Analysis

ERM-West managed the project and provided environmental scientists to perform the soil sampling and logging of the borings. The driller for the project was Kleinfelder and Associates, Stockton, California. The laboratory performing the analysis was Anlab, Sacramento, California.

Soil sampling and analysis were conducted in accordance with the San Francisco Municipal Code, Chapter 10, Article 20 (Soils Analysis Code). Borings were made with a hollow stem auger and samples were taken, as required, with a 2-inch California Modified Sampler, shelby tubes, or from the drill cuttings. Samples in most cases were taken ahead of the auger in undisturbed soil.

Laboratory analysis were conducted for the following constituents:

1. Inorganic Toxic Substances (priority pollutant metals; reference EPA Test Methods for Evaluating Solid Wastes, second edition, SW-846, July 1982)
2. Volatile Organic Toxic Pollutants (Purgeable Halocarbons, EPA #8010; Purgeable Aromatics, EPA #8020)
3. Total Petroleum Hydrocarbons (EPA #8015, modified)
4. PCBs (EPA #8080)
5. pH (EPA #9040)
6. Flammability (EPA #1010)
7. Cyanides (EPA #9010)
8. Sulfides (EPA #9030)

Results of Soil Analysis

The results of the soil investigation are summarized in Table 1 for the compounds that exceed State and Federal Regulations. The complete laboratory reports for each of the borings and the samples analyzed are provided in Attachment B. Boring numbers identified in Table 1 correspond to the boring locations shown on Figure 1.

Title 22, California Administrative Code, and the Department of Health Services, Action Level Table were used as regulatory standards to compare the results of the samples for identifying whether the sample can be classified as a hazardous waste. For the metals and some of the organic compounds, Title 22 establishes the limits for hazardous waste classifications. For the purgeable organic compounds, no limits are provided by Title 22, therefore the "action levels" established by the Department of Health Services was used for comparison.

Of the 26 borings drilled, 11 boring locations indicate the presence of chemical compounds that are in sufficient concentration to potentially classify the material as hazardous waste or in excess of the action levels established by DOHS. The results of the soil investigation are from a limited number of

borings along the alignment of the proposed sewer, and that the evidence of potential contamination in any one sample is for that boring location only. The extent of the potential contamination cannot be determined, nor the level of cleanup, if required, cannot be determined without further detail investigation of ground water flow, local geology, future use of the area, with respect to both land and water, and without the full concurrence of the regulatory agencies and the City of San Francisco.

The borings, where contamination was found to exceed the above referenced regulatory standards, can be grouped into four areas within the proposed sewer alignment: Area 1 - Hawes St. between Thomas and Van Dyke Avenues (borings 2, 3, 4, and 5); Area 2 - Hawes St. and Armstrong Ave (borings "I", 7 and 8); Area 3 - Ingalls St. and Armstrong Ave (boring "G", "O", 9, and 10); and Area 4 - Bancroft Ave. straddling Griffith St. (borings 11 and 12).

Area 1 - Borings 1, 2, 3, 4, and 5. In this area, high metal concentrations (copper, lead, and nickel), that exceed Title 22 limits, were found in several soil samples. The area is underlain with a fractured rock formation that prevented drilling deeper than 30 feet. In borings 1, 2, and 3, drilling stopped at depths ranging from 15 to 30 feet; ground water was not encountered in these borings.

Some detectable concentrations of purgeable organics (PCE, TCE, Chloroform, and 1,2 Dichloroethane) were found in the soil of these borings. With these levels of purgeable organics in the soil it is possible that these compounds may be found in the ground water in the area and in concentrations that exceed regulatory requirements.

Detectable levels of cyanide were also evident in samples from borings 2 and 4. The origin of this compound is unknown.

Area 2 - Borings "I", 7, 7A, and 8. In these borings, the samples indicated metals contamination (copper, zinc, lead, and mercury) in the soil and ground water contaminated with purgeable aromatics (benzene, touluene, etc.). In boring 7, a black, aromatic product was found floating on the ground water. The float smelled like tar and was thought to be creoste or some derivative of fence treatment, since the boring is located near the site of a former lumber yard. Subsequent testing of the soil from borings 7 and 8 indicated no evidence of creosote and pentachlorophenol above a detection limit of 10 mg/kg; however, significant levels of benzene, toluene, and xylene (BTX) were detected in the groundwater.

The water sample from boring 7A was analyzed and found to contain significant levels of creosote derivatives. The concentration levels of the chemicals are shown in Table 1.

Area 3 - Boring "G", "O", 9, and 10. Evidence of purgeable aromatic contamination (benzene, touluene, etc.) was found in the ground water. A leaking diesel fuel tank to the north of Ingalls St. may be the origin of the contamination. It appears that the contamination may be following the porous backfill of a sewer in the center of Ingalls St.

Detectable levels of cyanide were found in a soil sample from boring 10. As with Area 1, the origin of this compound is unknown.

Area 4 - Borings 11 and 12. Lead and nickel levels in soil samples were detected in excess of Title 22 standards. The concentrations did not exceed the TTLC limits; however, the concentrations noted in Table 1 exceed ten times the STLC limits.

Recommendations

1. Since the soil investigation included an exploration of only a small portion of the overall sewer excavation area, and potential contamination of the soil and water were found, the construction project should proceed with care, with the awareness that potential contaminated soil and water may be encountered between the boring areas where no contamination was found.

2. Contingency plans should be developed and initiated for the time when contaminated soil or water is encountered during the construction of the sewer.

3. The excavated soil from the sewer trench should be visually inspected as the project progresses for signs of contamination. A volatile organic analyzer should be on-site, used, and maintained throughout the excavation portion of the project.

4. By areas, the specific recommendations aside from the general ones noted above, are as follows:

   Area 1 - Few metal concentrations were found that potentially exceed STLC limits; therefore, construction may proceed in this area. However, purgeable organics were uncovered in the soil, and ground water was not encountered. The potential for PCE, TCE, and other contamination is possible. If ground water is encountered in this area, a volatile organic analyzer should be used to test for presence of organics. If readings in excess of 100 are detected, then further sampling and analysis should be performed on the material.

   Area 2 - Construction should not proceed in this area until further investigations are conducted. Specifically, more borings will be drilled to determine

the extent of the groundwater contamination by creosote around boring 7A (adjacent to boring 7). The fuel contamination around boring I is not significant enough to warrant cleanup. An additional boring will be made to verify level.

Area 3 - Construction may proceed in this area since total hydrocarbons are less than 10 mg/l.

Area 4 - Few metal concentrations were found that potentially exceed STLC limits; therefore, construction may proceed in this area.

5. If contaminated water is encountered in the excavation in any area, the potential for the sewer to act as a conduit for the contamination is great. Barriers across the sewer alignment should be constructed to stem the potential for contaminant transport through the sewer backfill. As a minimum barriers should be considered between areas 1 and 2, 2 and 4, and between boring locations "O" and 9.

6. If contaminated soils in the water bearing strata are removed from area 2, 5,700 cubic yards would require disposal at a class 1 disposal site. These estimated volumes of contaminated soil is assumed removed from the trenching operation only and does not include soil outside the excavation. Contaminated ground water would require approved treatment and disposal.

Please call if you have any questions or require further discussion or interpretation of the results.

Very truly yours,

ERM-West

Dennis Miller

for Daniel Hinrichs
Principal Engineer

DM/204

Enclosure - Noted

cc: Melita Elmore
Dennis Miller

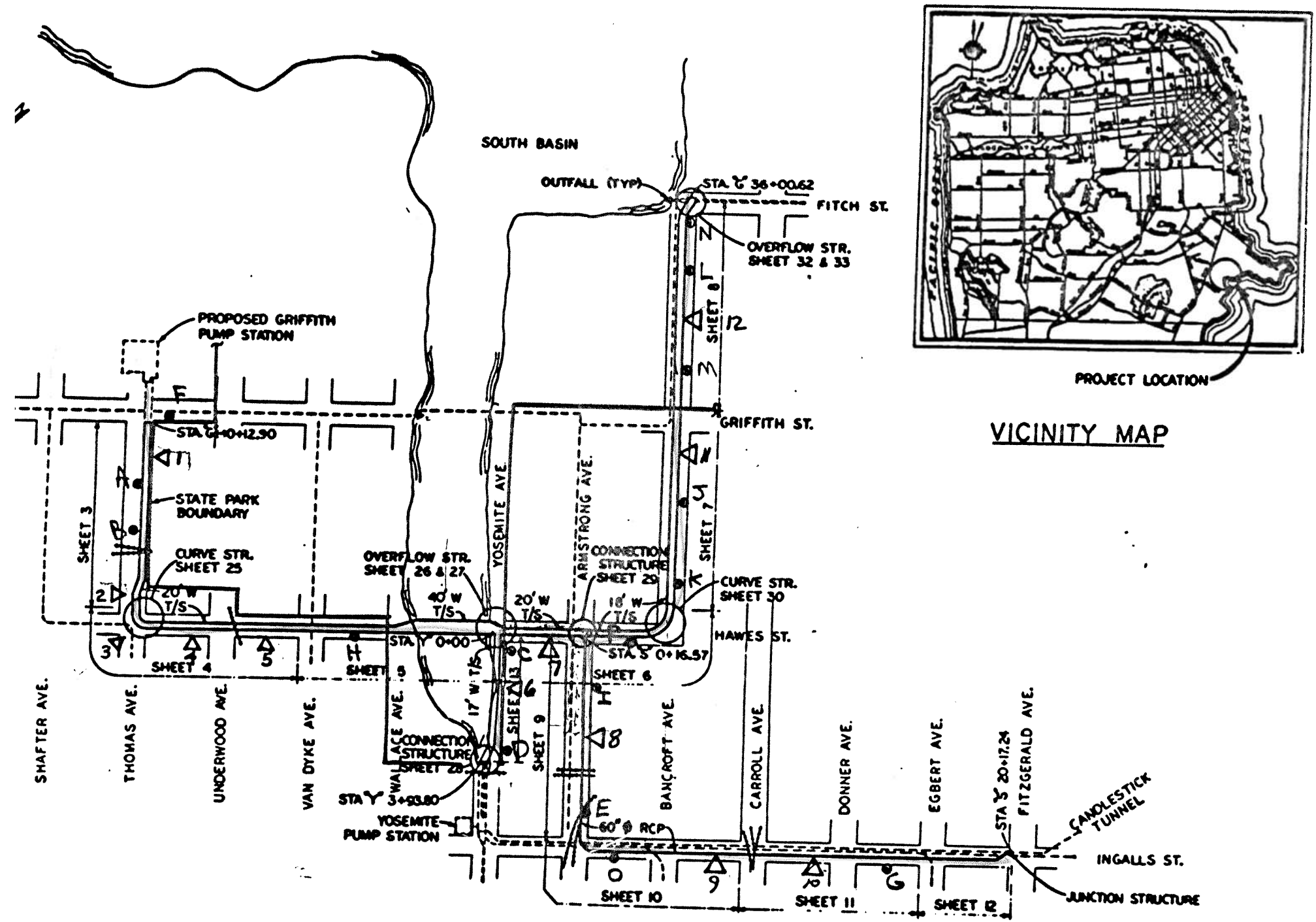


Figure 1 LOCATION MAP

TABLE 1

BORINGS WHERE SPECIFIC COMPOUNDS EXCEEDED
REGULATORY STANDARDS OR ACTION LEVELS

CONSTITUENT	Boring Number											REGULATORY STANDARD (1) or ACTION LIMIT	
	B2	B4	B5	B7	B7A	B8	B10	B11	B12	B"O"	BI	STLC (mg/l)	TTLC (mg/kg)
Antimony, mg/kg												15.0	500
Arsenic, mg/kg												5.0	500
Beryllium, mg/kg												0.75	75
Cadmium, mg/kg												1.0	100
Chromium, mg/kg												5.0	500
Copper, mg/kg		1400**		440								25.0	2,500
Lead, mg/kg			120**	230				76	740*			5.0	1000
Mercury, mg/kg						.039						0.2	20
Nickel, mg/kg		1900**						1400				20.0	2,000
Silver, mg/kg												5.0	500
Thallium, mg/kg												7.0	700
Zinc, mg/kg				7400								250	5,000
Trichloroethlene, mg/kg													
PCB's												204	2,040
Flammability												5.0	50
Cyanide, mg/kg	4.8	2.7					4.0						
Sulfide, mg/kg													
Total Petroleum Hydrocarbons, mg/l					680					7	36	10 mg/l	
Benzene, mg/l					0.8					1.2	1.7	0.0007 mg/l	
Toluene, mg/l					0.14					2.3	0.87	0.10 mg/l	
Ethylbenzene, mg/l					1.0					0.73	0.14	-	
Xylenes, mg/l					1.2					1.0	0.09	0.62 mg/l	
1,1-Dichloroethylene, mg/l					0.2					0.17	0.18	0.0001 - .0004 mg/l	

TABLE 1 - Continued

BORINGS WHERE SPECIFIC COMPOUNDS EXCEEDED
REGULATORY STANDARDS OR ACTION LEVELS

CONSTITUENT	Boring Number											REGULATORY STANDARD (1) or ACTION LIMIT	
	B2	B4	B5	B7	B7A	B8	B10	B11	B12	B"O"	BI	STLC (mg/l)	TTLC (mg/kg)
Creosote Components													
Acenaphthylene					0.19 mg/l								
Anthracene					1.6 mg/l								
Chrysene					0.36 mg/l								
Fluoranthene					1.3 mg/l								
Fluorene					0.38 mg/l								
Napthalene					2.7 mg/l								
Phenanthrene					0.82 mg/l								
Pyrene					1.0 mg/l								

(1) Soluble Threshold Limit Concentration (STLC)
Total Threshold Limit Concentration (TTLC)
STLC and TTLC values from California Administrative Code, Title 22, Section 66699,
Title 22, Section 66699, Adopted January 12, 1985

* Indicates average of 3 samples

** Indicates one depth only

ATTACHMENT A

ERM-West
Environmental Resources Management

1777 Botelho Drive • Suite 260 • Walnut Creek, California 94596-5022 ☎ (415) 946-0455
4630 Campus Drive • Suite 200 • Newport Beach, California 92660-1805 ☎ (714) 852-9490
2865 Sunrise Boulevard • Suite 105 • Rancho Cordova, California 95670-6538 ☎ (916) 635-7766

Reply To:

Rancho Cordova

November 3, 1986

Mr. Steve Medberry
Division Engineer
Industrial Waste Division
750 Phelps Street
San Francisco, CA 94124

SUBJECT: Hazardous Waste Investigation Yosemite and Fitch Outfalls Consolidation

Dear Steve:

The City and County of San Francisco, Department of Public Works propose to construct transport/storage facilities for industrial waste lines. This project will reduce overflows and will transport wet and dry weather flows to a treatment plant. The proposed project consists of a 16 block area surrounding the Fitch Street, Griffith Street and Yosemite Avenue outfalls, and is located in a heavily industrialized area.

Prior to construction, a hazardous waste investigation will be conducted. Based on records search of the area by Norman Grib, the industries present were of the type that we would expect the presence of inorganics, fuels, oils, other organics, and heavy metals. We will initially take preliminary samples - the approximate sample locations are shown on the map as circles - and check those borings with an organic vapor analyzer. If positive results are found, soil samples will be taken for further analyses. Soil and/or groundwater samples will also be taken for laboratory testing at those locations represented on the map with triangles and numbered 1 through 12.

Laboratory analyses to be conducted include:

1. Inorganic Toxic Substances
2. Volatile Organic Toxic Pollutants
3. PCBs
4. pH
5. Flammability
6. Cyanides
7. Sulfides
8. Methane and other flammable gases

These are the constituents required to be analyzed by the San Francisco Municipal Code, Chapter 10, Article 20 (Soils Analyses Code). Additionally, we recommend that Samples No. 7 and 8 are also analyzed for cresote, pentachlorophenol, and phenol. These sample points are located by lumber yards where wood may have been treated with a preservative.

Composite soil samples will be tested. Individual samples will be preserved in the event that more information is needed or contamination is found. Holes will be drilled to the bottom of the proposed excavation (varies to a maximum of 32 feet) or to the top of the bay mud layer. We may also drill through the bay mud in several locations if further investigations reveal that neighboring industries produce(d) chemicals that may permeate bay muds. Mr. Grib is to provide a list of the possible chemicals present from the nearby businesses.

If all results are less than allowable limits as noted in the Soil Analyses Code, then a report will be prepared stating these results. If limits are exceeded, additional testing will be done. The extent of the testing will depend on original results and location of problem(s). A determination will also be required as to the means of cleanup. All sampling and analyses will be conducted according to approved methodology as stated in the Soils Analyses Code.

The result of the proposed sampling program is, in my judgment, representative of the proposed excavation site conditions. Upon completion of this work and review of the results, I will repeat the above statement except the word proposed will be deleted.

If you have any questions, please call me.

Sincerely yours,

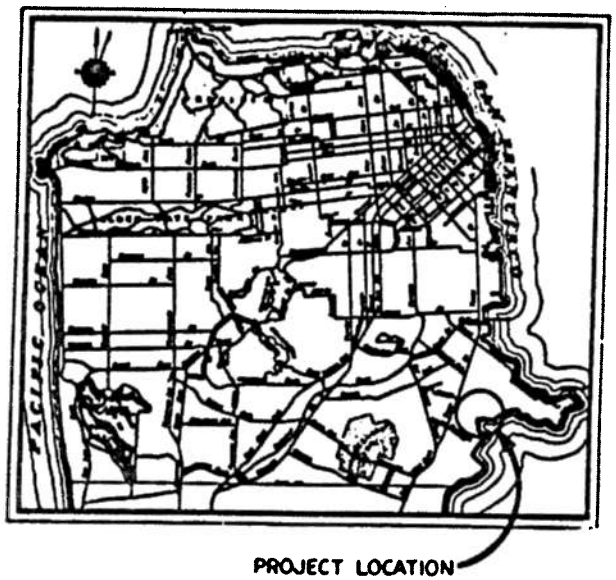
ERM-West

Melita Elmore (for)

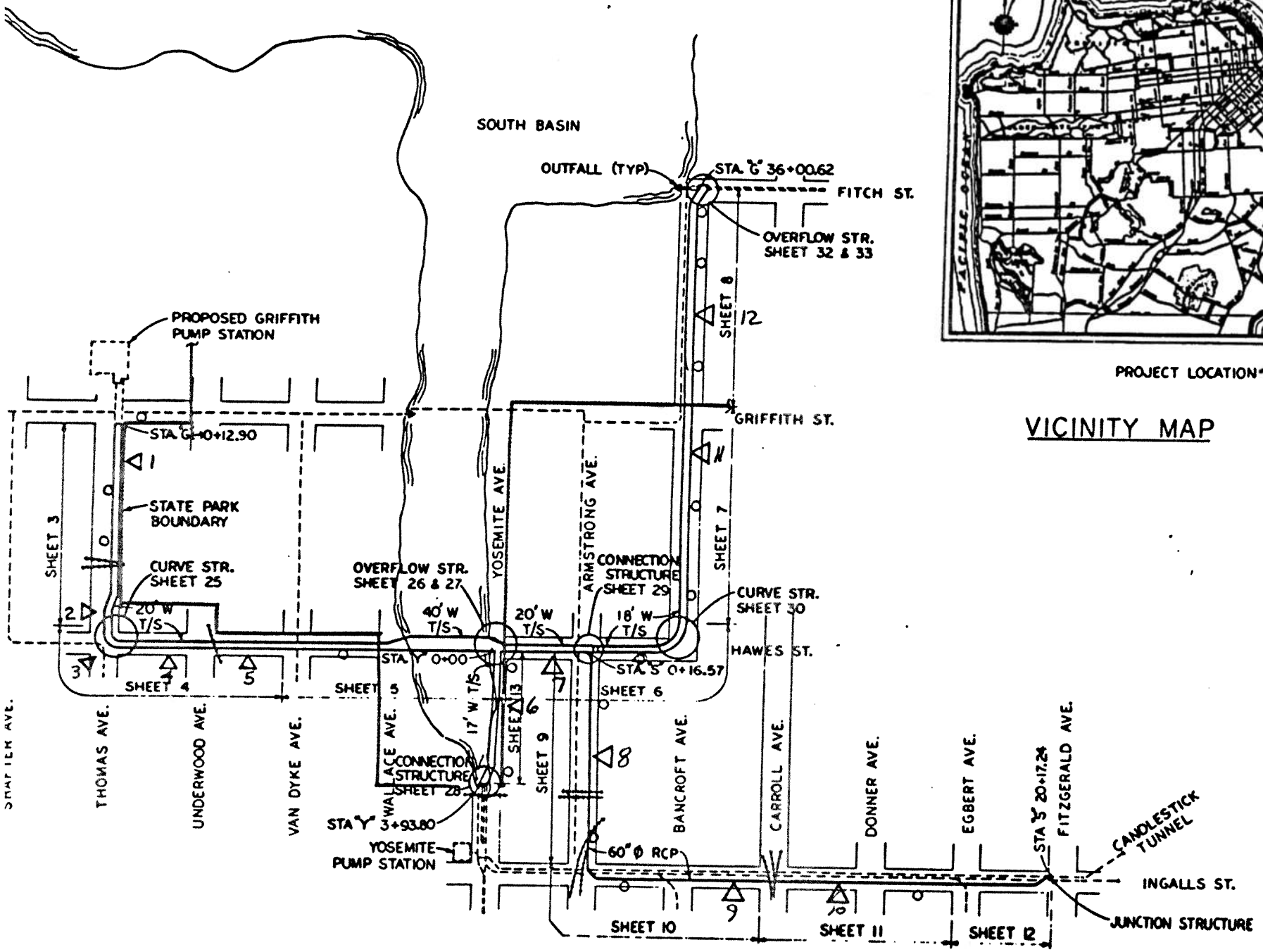
Daniel Hinrichs
Principal Engineer

DH/lal/192

cc: Norman Grib
Tom Ikesaki
Melita Elmore



VICINITY MAP



LOCATION MAP

ATTACHMENT B

ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

December 24, 1986
Sample Date: 11/11 11/12/86
Sample Rec'd. Date: 11/13/86
Report #111359

ERM-WEST
2865 Sunrise Blvd.
Rancho Cordova, CA 95670

Attn: Dan Hinrichs

Project ~~#192~~ 204

DESCRIPTION ANLAB ID#	CRESOTE EPA #8270-FID	PENTACHLOROPHENOL EPA #8040-FID
Boring 7 111265-15,16	<10 mg/kg	<10 mg/kg
Boring 8 111311-8,9	<10 mg/kg	<10 mg/kg
Boring "O" 111359-13	<1 mg/l	<1 mg/l

Data Certified by Don Hisaki

Report Approved by Kaye Elliott

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

Dan Hinrichs
ERM-WEST
Rancho Cordova

Project: 204

DESCRIPTION/ ANLAB ID NO.	pH	Total Cyanide mg/l	Sulfide mg/kg	Flammability* °F **	PCB* Arochlors mg/kg
Boring #1 5-12-5' cutting composite 111235-1	8.9	<0.2	<0.1	>150°F	<0.1
Boring #2 10-22-5 cutting composite 111235-2	8.4	4.8	<0.1	>150°F	<0.1
Boring #3 composite of 3 Borings 111235-4,5,6	8.2	<0.2	<0.1	>150°F	<0.1
Boring #4 composite of 3 Borings 111235-9,10,11	7.6	2.7	<0.1	>150°F	<0.1
Boring #5 composite of 3 Borings 111235-13,14,15	7.8	<0.2	<0.1	>150°F	<0.1

*These were run individually values are average of the three.

**Based on values of flammability -Methane was not performed.

Data Certified by Dan Hinrichs

Report Approved by Kaye Elliott

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

December 22, 1986
Sample Date: 11/11 11/12/86
Sample Rec'd. Date: 11/13/86
Report #111235

ERM-WEST
Dan Hinrichs
2865 Sunrise Blvd.
Rancho Cordova, CA 95670

Project #204

DESCRIPTION ANALB ID#	pH	TOTAL CYANIDE mg/kg	SULFIDE mg/kg	FLAMMABILITY °F	PCB ARCHLORS mg/kg
Boring #6 111265-14	8.3	<0.2	<0.1	>150	<0.1
Boring #7 111265-15,16	8.2	<0.2	<0.1	>150	<0.1
Boring #8 111311-8,9	8.1	<0.2	<0.1	>150	<0.1
Boring #9 111265-1,2	7.4	<0.2	<0.1	>150	<0.1
Boring #10 111265-5,6,7	7.6	4.0	<0.1	>150	<0.1
Boring #11 111311-13,14,15	7.9	<0.2	<0.1	>150	<0.1
Boring #12 111311-1,2,3	8.0	<0.2	<0.1	>150	<0.1

Data Certified by

Report Approved by rae

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ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

Dan Hinrichs
ERM-WEST
Rancho Cordova

Project: 204

DESCRIPTION ANLAB ID NO.	Be mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Pb mg/kg	Ni mg/kg	Ag mg/kg	Zn mg/kg
Boring #1 5-12-5 Cutting Composite 111235-1	0.6	0.4	40	18	15	42	1.0	58
Boring #2 10-22-5 cutting composite 111235-2	0.6	0.6	70	21	16	47	1.2	60
Boring #3* Composite of 3 Borings 111235-4,5,6	0.5	2.0	52	18	16	55	0.8	44
Boring #4* Composite of 3 Borings 111235-9,10,11	0.3	<0.2	48	720	16	970	0.4	480
Boring #5* Composite of 3 Borings 111235-13,14,15	0.3	0.2	64	160	70	50	0.4	530

*These were analyzed individually and are listed in attachment. These are averages of three samples.

Data Certified by Dan Hinrichs

Report Approved by Kyle Ellrott

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

Dan Hinrichs
ERM-WEST
Rancho Cordova

Project: 204

DESCRIPTION NLAB ID NO.	Sb mg/kg	As mg/kg	Se mg/kg	Tl mg/kg	Hg mg/kg
Boring #1 -12-5 Cutting Composite 111235-1	<0.2	18	<0.1	<0.04	0.20
oring #2 0-22-5 Cutting Composite 11235-2	<0.2	18	<0.1	0.02	0.05
Boring #3 mposite of Borings .11235-4,5,6	<0.2	20	<0.1	0.03	0.05
ring #4* omposite of Borings 1235-9,10,11	<0.2	2.7	<0.1	0.02	0.05
oring #5* mposite of Borings 11235-13,14-15	<0.2	9.1	<0.1	0.02	0.08

hese were analyzed individually and are listed in attachment. These are averages of three amples.

Data Certified by Dan Hinrichs

Report Approved by Kay Elliott

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

X

ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

December 23, 1986
Sample Date: 11/11 11/12/86
Sample Rec'd. Date: 11/13/86
Report #111235

ERM-WEST
Dan Hinrichs
2865 Sunrise Blvd.
Rancho Cordova, CA 95670

Project #204

DESCRIPTION/ ANLAB ID#	Be mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Pb mg/kg	Ni mg/kg	Ag mg/kg	Zn mg/kg	Sb mg/kg
Boring #6 111265-14	0.4	0.4	44	19	11	49	0.4	44	<0.2
Boring #7 111265-15,16	0.4	0.7	50	94	76	46	0.6	180	<0.2
Boring #8 111311-8,9	0.3	0.2	35	64	13	28	0.4	35	<0.2
Boring #9 111265-1,2	0.2	<0.2	94	18	11	50	0.5	37	<0.2
Boring #10 111265-5,6,7	0.3	0.2	57	12	13	45	0.3	30	<0.2
Boring #11 111311-13,14,15	0.4	0.2	320	29	30	490	0.3	72	<0.2
Boring #12 111311-1,2,3	0.2	1.8	46	62	740	41	1.7	390	<0.2

Data Certified by _____

Report Approved by _____

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

January 12, 1987
Sample Date: 11/11 11/12/86
Sample Rec'd. Date: 11/13/86
Report #111235 (Addendum)

ERM-WEST
Dan Hinrichs
2865 Sunrise Blvd.
Rancho Cordova, CA 95670

Project #204

DESCRIPTION ANLAB ID#	As mg/kg	Se mg/kg	Tl mg/kg	Hg mg/kg
Boring #6 111265-14	13	<0.1	0.06	0.012
Boring #7 111265-15,16	9.7	<0.1	0.05	0.020
Boring #8 111311-8,9	5	<0.1	0.03	**0.039**
Boring #9 111265-1,2	8.7	<0.1	0.03	0.054
Boring #10 111265-5,6,7	7.3	<0.1	0.03	0.037
Boring #11 111311-13,14,15	4	<0.1	0.03	0.071
Boring #12 11311-1,2,3	6	<0.1	0.05	0.67

Data Certified by Bill Chancellor

Report Approved by Roger Elliott

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

December 22, 1986
Sample Date: 11/11 11/12/86
Sample Rec'd. Date: 11/13/86
Report #111235

ERM-WEST
Dan Hinrichs
2865 Sunrise Blvd.
Rancho Cordova, CA 95670

Project #204 - Individual Analysis

ANALYSIS	Boring 1 B1 111235-1	Boring 2 B2 111235-2	BA 111235-3	Boring 3 B3 111235-4	Boring 3 B3 111235-5	Boring 3 B3 111235-6	Boring 4 B9 111235-9
METALS:							
Beryllium, mg/kg	0.6	0.6	0.6	0.4	0.6	0.6	<0.2
Cadmium, mg/kg	0.4	0.6	0.6	0.4	3.6	0.4	<0.2
Chromium, mg/kg	40	70	39	50	31	63	35
Copper, mg/kg	18	21	21	15	20	21	14
Lead, mg/kg	15	16	20	15	15	16	22
Nickel, mg/kg	42	47	49	42	41	77	1900
Silver, mg/kg	1.0	1.2	1.2	0.6	1.0	1.0	0.6
Zinc, mg/kg	58	60	61	38	48	52	55
Antimony, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic, mg/kg	18	18	21	13	25	17	0.43
Selenium, mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thallium, mg/kg	0.04	0.02	0.02	0.04	0.04	0.2	<0.02
Mercury, mg/kg	0.20	0.053	0.044	0.060	0.065	0.032	0.023

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ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

December 22, 1986
Sample Date: 11/11 11/12/86
Sample Rec'd. Date: 11/13/86
Report #111235

ERM-WEST
Dan Hinrichs
2865 Sunrise Blvd.
Rancho Cordova, CA 95670

Project #204 - Individual Analysis

	Boring 4			Boring 5		
ANALYSIS	B4 111235-10	B4 111235-11	B4 111235-12	B5 111235-13	B5 111235-14	B5 111235-
METALS:						
Beryllium, mg/kg	0.2	0.4	0.4	0.4	0.2	0.4
Cadmium, mg/kg	<0.2	<0.2	3.0	<0.2	0.4	<0.2
Chromium, mg/kg	27	65	53	19	120	36
Copper, mg/kg	1400	58	49	25	610	18
Lead, mg/kg	8	9	13	25	120	12
Nickel, mg/kg	24	62	58	44	13	55
Silver, mg/kg	<0.2	0.2	0.2	0.8	0.6	<0.2
Zinc, mg/kg	950	32	45	52	1000	42
Antimony, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic, mg/kg	2.8	8	11	8.4	9.6	10
Selenium, mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thallium, mg/kg	0.02	0.02	0.04	0.04	<0.02	<0.02
Mercury, mg/kg	0.700	0.035	0.056	0.096	1.7	0.02

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December 22, 1986
Sample Date: 11/11 11/12/86
Sample Rec'd. Date: 11/13/86
Report #111235

ERM-WEST
Dan Hinrichs
2865 Sunrise Blvd.
Rancho Cordova, CA 95670

Project #204 - Individual Analysis

	Boring 5		Boring 7
	B5	B5	B7
ANALYSIS	111235-15	111235-16	111235-17
METALS:			
Beryllium, mg/kg	0.4	0.2	<0.2
Cadmium, mg/kg	<0.2	<0.2	12
Chromium, mg/kg	36	44	43
Copper, mg/kg	18	6.4	440
Lead, mg/kg	12	6	230
Nickel, mg/kg	55	24	140
Silver, mg/kg	<0.2	0.8	0.80
Zinc, mg/kg	42	17	7400
Antimony, mg/kg	<0.2	<0.2	1.4
Arsenic, mg/kg	10	2.8	24
Selenium, mg/kg	<0.1	<0.1	<0.1
Thallium, mg/kg	<0.02	<0.02	<0.02
Mercury, mg/kg	0.028	0.017	0.023

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Purgable Halocarbons
EPA #8010

Client: ERM-WEST | Report # 111235 | Page

Sample Description: Boring #1 | Anlab ID# 111235-1 | Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.05	(AKA:Dichlorobromomethane)
Bromoform	<0.05	
Bromomethane	<0.05	
Carbon tetrachloride	<0.05	
Chlorobenzene	<0.05	
Chloroethane	<0.05	
2-Chloroethylvinyl ether	<0.1	
Chloroform	<0.05	
Chloromethane	<0.05	
Dibromochloromethane	<0.05	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.05	
1,3-Dichlorobenzene	<0.05	
1,4-Dichlorobenzene	<0.05	
Dichlorodifluoromethane	<0.15	
1,1-Dichloroethane	<0.05	
1,2-Dichloroethane	<0.05	
1,1-Dichloroethene	<0.02	
1,2-Dichloroethene	<0.05	(AKA: trans-1,2-Dichloroethylen
1,2-Dichloropropane	<0.05	
1,3-Dichloropropene	<0.05	(AKA: cis-1,3-Dichloropropylene
1,3-Dichloropropene	<0.05	(AKA: trans-1,3-Dichloropropyle
Methylene chloride	<0.05	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.05	
Tetrachloroethene	<0.05	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.05	
1,1,2-Trichloroethane	<0.05	
Trichloroethene	<0.05	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.05	
Vinyl Chloride	<0.01	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

Data Certified by _____ Report Approved By _____

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Purgable Halocarbons
EPA #8010

Client: ERM-WEST

Report # 111235

Page

Sample Description: Boring #2 (Soil)

Anlab ID# 111235-2

Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.05	(AKA:Dichlorobromomethane)
Bromoform	<0.05	
Bromomethane	<0.05	
Carbon tetrachloride	<0.05	
Chlorobenzene	<0.05	
Chloroethane	<0.05	
2-Chloroethylvinyl ether	<0.1	
Chloroform	<0.05	
Chloromethane	<0.05	
Dibromochloromethane	<0.05	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.05	
1,3-Dichlorobenzene	<0.05	
1,4-Dichlorobenzene	<0.05	
Dichlorodifluoromethane	<0.15	
1,1-Dichloroethane	<0.05	
1,2-Dichloroethane	<0.05	
1,1-Dichloroethene	<0.02	
1,2-Dichloroethene	<0.05	(AKA: trans-1,2-Dichloroethylene
1,2-Dichloropropane	<0.05	
1,3-Dichloropropene	<0.05	(AKA: cis-1,3-Dichloropropylene)
1,3-Dichloropropene	<0.05	(AKA: trans-1,3-Dichloropropyler
Methylene chloride	<0.05	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.05	
Tetrachloroethene	0.16	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.05	
1,1,2-Trichloroethane	<0.05	
Trichloroethene	<0.05	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.05	
Vinyl Chloride	<0.01	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

Data Certified by _____

Report Approved By _____

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Purgable Halocarbons
EPA #8010

Client: ERM-WEST

Report # 111235

Page

Sample Description: Boring #3*

Anlab ID# 111235-4,5,6

Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.05	(AKA:Dichlorobromomethane)
Bromoform	<0.05	
Bromomethane	<0.05	
Carbon tetrachloride	<0.05	
Chlorobenzene	<0.05	
Chloroethane	<0.05	
2-Chloroethylvinyl ether	<0.1	
Chloroform	0.13	
Chloromethane	<0.05	
Dibromochloromethane	<0.05	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.05	
1,3-Dichlorobenzene	<0.05	
1,4-Dichlorobenzene	<0.05	
Dichlorodifluoromethane	<0.15	
1,1-Dichloroethane	<0.05	
1,2-Dichloroethane	0.12	
1,1-Dichloroethene	<0.02	
1,2-Dichloroethene	<0.05	(AKA: trans-1,2-Dichloroethylene
1,2-Dichloropropane	<0.05	
1,3-Dichloropropene	<0.05	(AKA: cis-1,3-Dichloropropylene)
1,3-Dichloropropene	<0.05	(AKA: trans-1,3-Dichloropropyler
Methylene chloride	<0.05	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.05	
Tetrachloroethene	<0.05	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.05	
1,1,2-Trichloroethane	<0.05	
Trichloroethene	0.37	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.05	
Vinyl Chloride	<0.01	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

Data Certified by _____

Report Approved By _____

*Average of composite. Sample run individually see attached.

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Purgable Halocarbons
EPA #8010

Client: ERM-WEST

Report # 111235 Page

Sample Description: Boring #4*

Anlab ID# 111235-9,10,11 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.05	(AKA:Dichlorobromomethane)
Bromoform	<0.05	
Bromomethane	<0.05	
Carbon tetrachloride	<0.05	
Chlorobenzene	<0.05	
Chloroethane	<0.05	
2-Chloroethylvinyl ether	<0.1	
Chloroform	0.04	
Chloromethane	<0.05	
Dibromochloromethane	<0.05	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.05	
1,3-Dichlorobenzene	<0.05	
1,4-Dichlorobenzene	<0.05	
Dichlorodifluoromethane	<0.15	
1,1-Dichloroethane	<0.05	
1,2-Dichloroethane	<0.05	
1,1-Dichloroethene	<0.02	
1,2-Dichloroethene	<0.05	(AKA: trans-1,2-Dichloroethylene
1,2-Dichloropropane	<0.05	
1,3-Dichloropropene	<0.05	(AKA: cis-1,3-Dichloropropylene)
1,3-Dichloropropene	<0.05	(AKA: trans-1,3-Dichloropropylen
Methylene chloride	<0.05	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.05	
Tetrachloroethene	<0.05	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.05	
1,1,2-Trichloroethane	<0.05	
Trichloroethene	<0.05	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.05	
Vinyl Chloride	<0.01	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

Data Certified by _____ Report Approved By _____

*Average of 3 samples. Samples run individually.

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Purgable Halocarbons
EPA #8010

Client: ERM-WEST

Report # 111235 Page

Sample Description: Boring #5*

Anlab ID# 111235-13,14,15 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.05	(AKA:Dichlorobromomethane)
Bromoform	<0.05	
Bromomethane	<0.05	
Carbon tetrachloride	<0.05	
Chlorobenzene	<0.05	
Chloroethane	<0.05	
2-Chloroethylvinyl ether	<0.1	
Chloroform	0.20	
Chloromethane	<0.05	
Dibromochloromethane	<0.05	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.05	
1,3-Dichlorobenzene	<0.05	
1,4-Dichlorobenzene	<0.05	
Dichlorodifluoromethane	<0.15	
1,1-Dichloroethane	<0.05	
1,2-Dichloroethane	<0.05	
1,1-Dichloroethene	<0.02	
1,2-Dichloroethene	<0.05	(AKA: trans-1,2-Dichloroethylene
1,2-Dichloropropane	<0.05	
1,3-Dichloropropene	<0.05	(AKA: cis-1,3-Dichloropropylene)
1,3-Dichloropropene	<0.05	(AKA: trans-1,3-Dichloropropyler
Methylene chloride	<0.05	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.05	
Tetrachloroethene	0.04	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.05	
1,1,2-Trichloroethane	<0.05	
Trichloroethene	0.03	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.05	
Vinyl Chloride	<0.01	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

Data Certified by _____ Report Approved By _____

*Average of 3 samples.

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Purgable Halocarbons
EPA #8010

Client: ERM-WEST | Report # 111265 | Page

Sample Description: Boring #6 | Anlab ID# 111265-14 | Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.05	(AKA:Dichlorobromomethane)
Bromoform	<0.05	
Bromomethane	<0.05	
Carbon tetrachloride	<0.05	
Chlorobenzene	<0.05	
Chloroethane	<0.05	
2-Chloroethylvinyl ether	<0.1	
Chloroform	<0.05	
Chloromethane	<0.05	
Dibromochloromethane	<0.05	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.05	
1,3-Dichlorobenzene	<0.05	
1,4-Dichlorobenzene	<0.05	
Dichlorodifluoromethane	<0.15	
1,1-Dichloroethane	<0.05	
1,2-Dichloroethane	<0.05	
1,1-Dichloroethene	<0.02	
1,2-Dichloroethene	<0.05	(AKA: trans-1,2-Dichloroethylen
1,2-Dichloropropane	<0.05	
1,3-Dichloropropene	<0.05	(AKA: cis-1,3-Dichloropropylene)
1,3-Dichloropropene	<0.05	(AKA: trans-1,3-Dichloropropyler
Methylene chloride	<0.05	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.05	
Tetrachloroethene	<0.05	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.05	
1,1,2-Trichloroethane	<0.05	
Trichloroethene	<0.05	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.05	
Vinyl Chloride	<0.01	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

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Purgable Halocarbons
EPA #8010

Client: ERM-WEST

Report # 111265

Page

Sample Description: Boring #9

Anlab ID# 111265-1,2*

Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.05	(AKA:Dichlorobromomethane)
Bromoform	<0.05	
Bromomethane	<0.05	
Carbon tetrachloride	<0.05	
Chlorobenzene	<0.05	
Chloroethane	<0.05	
2-Chloroethylvinyl ether	<0.1	
Chloroform	<0.05	
Chloromethane	<0.05	
Dibromochloromethane	<0.05	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.05	
1,3-Dichlorobenzene	<0.05	
1,4-Dichlorobenzene	<0.05	
Dichlorodifluoromethane	<0.15	
1,1-Dichloroethane	<0.05	
1,2-Dichloroethane	<0.05	
1,1-Dichloroethene	<0.02	
1,2-Dichloroethene	<0.05	(AKA: trans-1,2-Dichloroethylene
1,2-Dichloropropane	<0.05	
1,3-Dichloropropene	<0.05	(AKA: cis-1,3-Dichloropropylene)
1,3-Dichloropropene	<0.05	(AKA: trans-1,3-Dichloropropylen
Methylene chloride	<0.05	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.05	
Tetrachloroethene	**0.38**	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.05	
1,1,2-Trichloroethane	<0.05	
Trichloroethene	<0.05	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.05	
Vinyl Chloride	<0.01	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

Data Certified by _____

Report Approved By _____

*Composite

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Purgable Halocarbons
EPA #8010

Client: ERM-WEST

Report # 111265

Page

Sample Description: Boring #10

Anlab ID# 111265-5,6,7

Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.05	(AKA:Dichlorobromomethane)
Bromoform	<0.05	
Bromomethane	<0.05	
Carbon tetrachloride	<0.05	
Chlorobenzene	<0.05	
Chloroethane	<0.05	
2-Chloroethylvinyl ether	<0.1	
Chloroform	<0.05	
Chloromethane	<0.05	
Dibromochloromethane	<0.05	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.05	
1,3-Dichlorobenzene	<0.05	
1,4-Dichlorobenzene	<0.05	
Dichlorodifluoromethane	<0.15	
1,1-Dichloroethane	<0.05	
1,2-Dichloroethane	<0.05	
1,1-Dichloroethene	<0.02	
1,2-Dichloroethene	<0.05	(AKA: trans-1,2-Dichloroethylene
1,2-Dichloropropane	<0.05	
1,3-Dichloropropene	<0.05	(AKA: cis-1,3-Dichloropropylene)
1,3-Dichloropropene	<0.05	(AKA: trans-1,3-Dichloropropyler
Methylene chloride	<0.05	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.05	
Tetrachloroethene	<0.05	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.05	
1,1,2-Trichloroethane	<0.05	
Trichloroethene	<0.05	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.05	
Vinyl Chloride	<0.01	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

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Purgable Halocarbons
EPA #8010

Client: ERM-WEST

Report # 111311 Page

Sample Description: Boring #11

Anlab ID# 111311-13,14,15 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.05	(AKA:Dichlorobromomethane)
Bromoform	<0.05	
Bromomethane	<0.05	
Carbon tetrachloride	<0.05	
Chlorobenzene	<0.05	
Chloroethane	<0.05	
2-Chloroethylvinyl ether	<0.1	
Chloroform	<0.05	
Chloromethane	<0.05	
Dibromochloromethane	<0.05	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.05	
1,3-Dichlorobenzene	<0.05	
1,4-Dichlorobenzene	<0.05	
Dichlorodifluoromethane	<0.15	
1,1-Dichloroethane	<0.05	
1,2-Dichloroethane	<0.05	
1,1-Dichloroethene	<0.02	
1,2-Dichloroethene	<0.05	(AKA: trans-1,2-Dichloroethylene
1,2-Dichloropropane	<0.05	
1,3-Dichloropropene	<0.05	(AKA: cis-1,3-Dichloropropylene)
1,3-Dichloropropene	<0.05	(AKA: trans-1,3-Dichloropropylen
Methylene chloride	<0.05	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.05	
Tetrachloroethene	<0.05	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.05	
1,1,2-Trichloroethane	<0.05	
Trichloroethene	<0.05	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.05	
Vinyl Chloride	<0.01	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

Data Certified by _____ Report Approved By _____

Composite

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1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

Purgable Halocarbons
EPA #8010

Client: ERM-WEST

Report # 111311 Page

Sample Description: Boring #12

Anlab ID# 111311-1,2,3,4 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.05	(AKA:Dichlorobromomethane)
Bromoform	<0.05	
Bromomethane	<0.05	
Carbon tetrachloride	<0.05	
Chlorobenzene	<0.05	
Chloroethane	<0.05	
2-Chloroethylvinyl ether	<0.1	
Chloroform	<0.05	
Chloromethane	<0.05	
Dibromochloromethane	<0.05	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.05	
1,3-Dichlorobenzene	<0.05	
1,4-Dichlorobenzene	<0.05	
Dichlorodifluoromethane	<0.15	
1,1-Dichloroethane	<0.05	
1,2-Dichloroethane	0.26	
1,1-Dichloroethene	<0.02	
1,2-Dichloroethene	<0.05	(AKA: trans-1,2-Dichloroethylene
1,2-Dichloropropane	<0.05	
1,3-Dichloropropene	<0.05	(AKA: cis-1,3-Dichloropropylene)
1,3-Dichloropropene	<0.05	(AKA: trans-1,3-Dichloropropyler
Methylene chloride	<0.05	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.05	
Tetrachloroethene	<0.05	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.05	
1,1,2-Trichloroethane	<0.05	
Trichloroethene	<0.05	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.05	
Vinyl Chloride	<0.01	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

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Purgable Halocarbons
EPA #8010

Client: ERM-WEST

Report # 111311 Page

Sample Description: Boring I

Anlab ID# 111311-10,11,12 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.05	(AKA:Dichlorobromomethane)
Bromoform	<0.05	
Bromomethane	<0.05	
Carbon tetrachloride	<0.05	
Chlorobenzene	<0.05	
Chloroethane	<0.05	
2-Chloroethylvinyl ether	<0.1	
Chloroform	<0.05	
Chloromethane	<0.05	
Dibromochloromethane	<0.05	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.05	
1,3-Dichlorobenzene	<0.05	
1,4-Dichlorobenzene	<0.05	
Dichlorodifluoromethane	<0.15	
1,1-Dichloroethane	<0.05	
1,2-Dichloroethane	<0.05	
1,1-Dichloroethene	<0.02	
1,2-Dichloroethene	<0.05	(AKA: trans-1,2-Dichloroethylene
1,2-Dichloropropane	<0.05	
1,3-Dichloropropene	<0.05	(AKA: cis-1,3-Dichloropropylene)
1,3-Dichloropropene	<0.05	(AKA: trans-1,3-Dichloropropylen
Methylene chloride	<0.05	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.05	
Tetrachloroethene	<0.05	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.05	
1,1,2-Trichloroethane	<0.05	
Trichloroethene	<0.05	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.05	
Vinyl Chloride	<0.01	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

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Purgable Halocarbons
EPA #8010

Client: ERM-WEST

Report # 111359-11

Page

Sample Description: Boring O

Anlab ID# 111359-11

Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.05	(AKA:Dichlorobromomethane)
Bromoform	<0.05	
Bromomethane	<0.05	
Carbon tetrachloride	<0.05	
Chlorobenzene	<0.05	
Chloroethane	<0.05	
2-Chloroethylvinyl ether	<0.1	
Chloroform	<0.05	
Chloromethane	<0.05	
Dibromochloromethane	<0.05	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.05	
1,3-Dichlorobenzene	<0.05	
1,4-Dichlorobenzene	<0.05	
Dichlorodifluoromethane	<0.15	
1,1-Dichloroethane	<0.05	
1,2-Dichloroethane	<0.05	
1,1-Dichloroethene	<0.02	
1,2-Dichloroethene	<0.05	(AKA: trans-1,2-Dichloroethylen
1,2-Dichloropropane	<0.05	
1,3-Dichloropropene	<0.05	(AKA: cis-1,3-Dichloropropylene
1,3-Dichloropropene	<0.05	(AKA: trans-1,3-Dichloropropyle
Methylene chloride	<0.05	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.05	
Tetrachloroethene	<0.05	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.05	
1,1,2-Trichloroethane	<0.05	
Trichloroethene	<0.05	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.05	
Vinyl Chloride	<0.01	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

Data Certified by _____

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Purgable Halocarbons
EPA #601

Client: ERM-WEST | Report # 111265 | Page

Sample Description: Boring 7A | Anlab ID# 111265-29 | Units: ug/l

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.5	(AKA:Dichlorobromomethane)
Bromoform	<0.5	
Bromomethane	<0.5	
Carbon tetrachloride	<0.5	
Chlorobenzene	<0.5	
Chloroethane	<0.5	
2-Chloroethylvinyl ether	<1	
Chloroform	<0.5	
Chloromethane	<0.5	
Dibromochloromethane	<0.5	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.5	
1,3-Dichlorobenzene	<0.5	
1,4-Dichlorobenzene	<0.5	
Dichlorodifluoromethane	<1.5	
1,1-Dichloroethane	<0.5	
1,2-Dichloroethane	<0.5	
1,1-Dichloroethene	170	
1,2-Dichloroethene	<0.5	(AKA: trans-1,2-Dichloroethylene)
1,2-Dichloropropane	<0.5	
1,3-Dichloropropene	<0.5	(AKA: cis-1,3-Dichloropropylene)
1,3-Dichloropropene	<0.5	(AKA: trans-1,3-Dichloropropylene)
Methylene chloride	<0.5	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.5	
Tetrachloroethene	<0.5	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.5	
1,1,2-Trichloroethane	<0.5	
Trichloroethene	<0.5	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.5	
Vinyl Chloride	<0.1	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

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Purgable Halocarbons
EPA #601

Client: ERM-WEST

Report # 111359 Page

Sample Description: Boring O

Anlab ID# 111359-15 Units: ug/l

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.5	
Bromoform	<0.5	(AKA:Dichlorobromomethane)
Bromomethane	<0.5	
Carbon tetrachloride	<0.5	
Chlorobenzene	<0.5	
Chloroethane	<0.5	
2-Chloroethylvinyl ether	<0.5	
Chloroform	<1	
Chloromethane	<0.5	
Dibromochloromethane	<0.5	
1,2-Dichlorobenzene	<0.5	(AKA: Chlorodibromomethane)
1,3-Dichlorobenzene	<0.5	
1,4-Dichlorobenzene	<0.5	
Dichlorodifluoromethane	<0.5	
1,1-Dichloroethane	<1.5	
1,2-Dichloroethane	<0.5	
1,1-Dichloroethene	<0.5	
1,2-Dichloroethene	200	
1,2-Dichloropropane	<0.5	(AKA: trans-1,2-Dichloroethylene)
1,3-Dichloropropene	<0.5	
1,3-Dichloropropene	<0.5	(AKA: cis-1,3-Dichloropropylene)
Methylene chloride	<0.5	(AKA: trans-1,3-Dichloropropylene
1,1,2,2,-Tetrachloroethane	<0.5	(AKA: Dichloromethane)
Tetrachloroethene	<0.5	
1,1,1-Trichloroethane	<0.5	(AKA: Tetrachloroethylene, PCE)
1,1,2-Trichloroethane	<0.5	
Trichloroethene	<0.5	
Trichlorofluoromethane	<0.5	(AKA: Trichloroethylene, TCE)
Vinyl Chloride	<0.1	

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed

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Purgable Halocarbons
EPA #601

Client: ERM-WEST

Report # 111311 Page

Sample Description: Boring I

Anlab ID# 111311-23 Units: ug/l

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION	
Bromodichloromethane	<0.5	(AKA:Dichlorobromomethane)
Bromoform	<0.5	
Bromomethane	<0.5	
Carbon tetrachloride	<0.5	
Chlorobenzene	<0.5	
Chloroethane	<0.5	
2-Chloroethylvinyl ether	<1	
Chloroform	<0.5	
Chloromethane	<0.5	
Dibromochloromethane	<0.5	(AKA: Chlorodibromomethane)
1,2-Dichlorobenzene	<0.5	
1,3-Dichlorobenzene	<0.5	
1,4-Dichlorobenzene	<0.5	
Dichlorodifluoromethane	<1.5	
1,1-Dichloroethane	<0.5	
1,2-Dichloroethane	<0.5	
1,1-Dichloroethene	180	
1,2-Dichloroethene	<0.5	(AKA: trans-1,2-Dichloroethylene
1,2-Dichloropropane	<0.5	
1,3-Dichloropropene	<0.5	(AKA: cis-1,3-Dichloropropylene)
1,3-Dichloropropene	<0.5	(AKA: trans-1,3-Dichloropropylen
Methylene chloride	<0.5	(AKA: Dichloromethane)
1,1,2,2,-Tetrachloroethane	<0.5	
Tetrachloroethene	<0.5	(AKA: Tetrachloroethylene, PCE)
1,1,1-Trichloroethane	<0.5	
1,1,2-Trichloroethane	<0.5	
Trichloroethene	<0.5	(AKA: Trichloroethylene, TCE)
Trichlorofluoromethane	<0.5	
Vinyl Chloride	<0.1	

OTHER COMPOUNDS DETECTED OR REQUESTED — CONCENTRATION

n/a = not analyzed

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111235 Page

Sample Description: Boring 1

Anlab ID #: 111235-1 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	0.12
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION
Methyl Ethyl Ketone	0.2

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111235 Page

Sample Description: Boring 2

Anlab ID #: 111235-2 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	0.1
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION
Methyl Ethyl Ketone	0.1

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111235 Page

Sample Description: Boring #3

Anlab ID #: 111235-4, 111235-5 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	0.18
Chlorobenzene	0.09
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	0.11
Ethylbenzene	0.15
Toluene	0.1
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION
Methyl Ethyl Ketone	0.2

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #:111235 Page

Sample Description: Boring #3

Anlab ID #:111235-5 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	0.21
Chlorobenzene	0.19
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	0.22
Ethylbenzene	0.29
Toluene	0.2
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #:111235 Page

Sample Description: Boring #4

Anlab ID #:111235-9, 10,11 Units:mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	0.1
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	0.07
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION
Methyl Ethyl Ketone	<0.1

n/a = not analyzed
n/d = none detected as specified in the EPA method

Data Certified by _____ Report Approved by _____

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111235 Page

Sample Description: Boring #4

Anlab ID #:111235-10 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed
n/d = none detected as specified in the EPA method

Data Certified by _____ Report Approved by _____

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #:111235 Page

Sample Description: Boring #4

Anlab ID #:111235-11 Units:mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	0.12
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	0.21
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION
Methyl Ethyl Ketone	0.1

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #:111235 Page

Sample Description: Boring #5

Anlab ID #:111235-13, 14,15,16 Units:mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<.1
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	0.12
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #:111265 Page

Sample Description: Boring #6

Anlab ID #:111265-14 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	1.3
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111311 Page

Sample Description: Boring #8

Anlab ID #: 111311-8,9 Units:mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	0.33
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111265 Page

Sample Description: Boring #9

Anlab ID #:111265-1,2Units:mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	0.11
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	0.89
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111265 Page

Sample Description: Boring #10

Anlab ID #:111265-5, 111265-6 Units:mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	0.07
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	0.08
Ethylbenzene	<0.05
Toluene	0.60
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

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n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #:111311 Page

Sample Description: Boring #11

Anlab ID #:111311-13, 14,15 Units:mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	3.3
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	1.5
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	1.0
Toluene	0.3
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED — CONCENTRATION

n/a = not analyzed
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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111235 Page

Sample Description: Boring #3

Anlab ID #: 111235-4 Units: mg/kg
Individual

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	0.15
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION
Methy Ethyl Ketone	0.2

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111235 Page

Sample Description: Boring #4

Anlab ID #: 111235-9 Units: mg/kg
Individual

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	0.1
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111235 Page

Sample Description: Boring #5
6-6.5'

Anlab ID #:111235-13 Units: mg/kg
Individual

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

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n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111235 Page

Sample Description: Boring #5

Anlab ID #:111235-14 Units:mg/kg
Individual

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	0.1
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	0.37
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #:111235 Page

Sample Description: Boring #5
15.5-16

Anlab ID #: 111235-15 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86

Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

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n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #:111235 Page

Sample Description: Boring #5
20.5 - 21.0

Anlab ID #:111235-16 Units:mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

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n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111311 Page

Sample Description: Boring #8
5.5-6'

Anlab ID #: 111311-8 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

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n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111311 Page

Sample Description: Boring #8
11-11.5'

Anlab ID #: 111311-9 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	0.66
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

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n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #:111265 Page

Sample Description: Boring #10

Anlab ID #:111265-6 Units:mg/kg
Individual

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	0.15
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	0.16
Ethylbenzene	<0.05
Toluene	0.62
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed
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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #:111265 Page

Sample Description: Boring #10
5-5.5'

Anlab ID #:111265-5 Units: mg/kg
Individual

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	0.36
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111265 Page

Sample Description: Boring #10
15.5-16.0'

Anlab ID #: 111265-7 Units: mg/kg
Individual

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	0.90
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111311 Page

Sample Description: Boring #11
5.5-6

Anlab ID #:111311-13 Units: mg/kg
Individual

Date sampled: 11/11 11/12/86 Date received: 11/13/86

Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

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n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111311 Page

Sample Description: Boring #11
10-10.5'

Anlab ID #: 111311-14 Units: mg/kg
Individual

Date sampled: 11/11 11/12/86 Date received: 11/13/86

Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

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n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #: 111311 Page

Sample Description: Boring #11
16-16.5'

Anlab ID #: 111311-15 Units: mg/kg
Individual

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	10.0
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	4.6
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	2.9
Toluene	1.1
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

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n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #602

Client: ERM-WEST

Report #: 111265 Page

Sample Description: Boring #6

Anlab ID #: 111265-14 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.5
Chlorobenzene	<0.5
1,2 - Dichlorobenzene	<0.5
1,3 - Dichlorobenzene	<0.5
1,4 - Dichlorobenzene	<0.5
Ethylbenzene	<0.5
Toluene	1.3
Xylenes	<0.5

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

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n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #:111311 Page

Sample Description: Boring I

Anlab ID #:111311-21 Units: mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	1700
Chlorobenzene	<0.05
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	140
Toluene	870
Xylenes	97

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION
1,1 Dichloroethylene	180

n/a = not analyzed
n/d = none detected as specified in the EPA method

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Purgable Aromatics
EPA #8020

Client: ERM-WEST

Report #:111311 Page

Sample Description: Boring #12

Anlab ID #:111311-1, 2,3,4 Units:mg/kg

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project #204

COMPOUND	CONCENTRATION
Benzene	<0.05
Chlorobenzene	0.31
1,2 - Dichlorobenzene	<0.05
1,3 - Dichlorobenzene	<0.05
1,4 - Dichlorobenzene	<0.05
Ethylbenzene	<0.05
Toluene	<0.05
Xylenes	<0.05

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION

n/a = not analyzed
n/d = none detected as specified in the EPA method

Data Certified by _____ Report Approved by _____

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

Purgable Aromatics
EPA #602

Client: ERM-WEST

Report #: 111265 Page

Sample Description: Boring 7A

Anlab ID #: 111265-27 Units: ug/l

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project: #204

COMPOUND	CONCENTRATION
Benzene	800
Chlorobenzene	<0.5
1,2 - Dichlorobenzene	<0.5
1,3 - Dichlorobenzene	<0.5
1,4 - Dichlorobenzene	<0.5
Ethylbenzene	1000
Toluene	140
Xylenes	1200

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION
1,1 Dichloroethylene	200

n/a = not analyzed
n/d = none detected as specified in the EPA method

Data Certified by _____ Report Approved by _____

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ANALYTICAL LABORATORY
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Purgable Aromatics
EPA #602

Client: ERM-WEST

Report #: 111359 Page

Sample Description: Boring "O"

Anlab ID #: 111359-14 Units: ug/l

Date sampled: 11/11 11/12/86 Date received: 11/13/86

Project #204

COMPOUND	CONCENTRATION
Benzene	1200
Chlorobenzene	<0.5
1,2 - Dichlorobenzene	<0.5
1,3 - Dichlorobenzene	<0.5
1,4 - Dichlorobenzene	<0.5
Ethylbenzene	730
Toluene	2300
Xylenes	1000

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION
1,1 Dichloroethyene	170

n/a = not analyzed
n/d = none detected as specified in the EPA method

Data Certified by _____ Report Approved by _____

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ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

December 23, 1986
Date Sampled: 11/11 11/12/86
Date Sample Received: 11/13/86
Report # 111265

ERM/WEST
2865 Sunrise Blvd.
Rancho Cordova, CA 95670

ATTN: Dan Hinrichs

Project #204

Sample Description/ Anlab ID #	Total Petroleum Hydrocarbons By EPA #8015 "Modified. mg/kg
Boring 7A 111265-27	680

Data Certified By Jan Thiede

Report Approved By Roger Elliott

sg

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ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

December 23, 1986
Date Sampled: 11/11 11/12/86
Date Sample Received: 11/13/86
Report # 111311

ERM/WEST
2865 Sunrise Blvd.
Rancho Cordova, CA 95670

ATTN: Dan Hinrichs

Project #204

Sample Description/ Anlab ID #	Total Petroleum Hydrocarbons By EPA #8015 "Modified. mg/kg
Boring "I" 111311-21	36

Data Certified By ______________

Report Approved By ______________

sg

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ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

Purgable Aromatics
EPA #602

Client: ERM-WEST

Report #: 111311 Page

Sample Description: Boring I

Anlab ID #: 111311-21 Units: ug/l

Date sampled: 11/11 11/12/86 Date received: 11/13/86
Project: #204

COMPOUND	CONCENTRATION
Benzene	1700
Chlorobenzene	<0.5
1,2 - Dichlorobenzene	<0.5
1,3 - Dichlorobenzene	<0.5
1,4 - Dichlorobenzene	<0.5
Ethylbenzene	140
Toluene	870
Xylenes	97

OTHER COMPOUNDS DETECTED OR REQUESTED	CONCENTRATION
1,1 Dichloroethylene	180

n/a = not analyzed
n/d = none detected as specified in the EPA method

Data Certified by _____ Report Approved by _____

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ANALYTICAL LABORATORY
A DIVISION OF DEWANTE & STOWELL

1914 S STREET, SACRAMENTO, CALIFORNIA 95814 • 916-447-2946

December 23, 1986
Date Sampled: 11/11 11/12/86
Date Sample Received: 11/13/86
Report # 111359

ERM/WEST
2865 Sunrise Blvd.
Rancho Cordova, CA 95670

ATTN: Dan Hinrichs

Project #204

Sample Description/ Anlab ID #	Total Petroleum Hydrocarbons By EPA #8015 "Modified. mg/kg
Boring "O" 111359-14	7

Data Certified By _____

Report Approved By _____

sg

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TITLE 22
LIST OF INORGANIC PERSISTANT
AND
BIOACCUMULATIVE TOXIC SUBSTANCES
AND
THEIR SOLUBLE THRESHOLD LIMIT CONCENTRATION (STLC)
AND
TOTAL THRESHOLD LIMIT CONCENTRATION (TTLC) VALUES

SUBSTANCE	STLC mg/l	TTLC WET-WEIGHT mg/kg
Antimony and/or antimony compounds	15	500
Arsenic and/or arsenic compounds	5.0	500
Asbestos	-	1.0 (as percent)
Barium and/or barium compounds (excluding barite)	100	10,000***
Beryllium and/or beryllium compounds	0.75	75
Cadmium and/or cadmium compounds	1.0	100
Chromium (VI) compounds	5	500
Chromium and/or chromium (III) compounds	560	2,500
Cobalt and/or cobalt compounds	80	8,000
Copper and/or copper compounds	25	2,500
Fluoride salts	180	18,000
Lead and/or lead compounds	5.0	1,000
Mercury and/or mercury compounds	0.2	20
Molybdenum and/or molybdenum compounds	350	3,500
Nickel and/or nickel compounds	20	2,000
Selenium and/or selenium compounds	1.0	100
Silver and/or silver compounds	5	500
Thallium and/or thallium compounds	7.0	700
Vanadium and/or vanadium compounds	24	2,400
Zinc and/or zinc compounds	250	5,000

*STLC and TTLC values are calculated on the concentrations of the elements, not the compunds

**In the case of asbestos and elemental metals, applies only if they are in a friable, powdered or finely divided state. Asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

***Excluding barium sulfate.

TITLE 22
LIST OF ORGANIC PERSISTANT
AND
BIOACCUMULATIVE TOXIC SUBSTANCES
AND
THEIR SOLUBLE THRESHOLD LIMIT CONCENTRATION (STLC)
AND
TOTAL THRESHOLD LIMIT CONCENTRATION (TTLC) VALUES

SUBSTANCE	STLC mg/l	TTLC WET-WEIGHT mg/kg
Aldrin	0.14	1.4
Chlordan	0.25	2.5
DDT, DDE, DDD	0.1	1.0
2,4 Dichlorophenoxyacetic acid	10	100
Dieldrin	0.8	8.0
Dioxin (2,3,7,8-TCDD)	0.001	0.01
Endrin	0.02	0.2
Heptachlor	0.47	4.7
Kepone	2.1	21
Lead compounds, organic	-	13
Lindane	0.4	4.0
Methoxychlor	10	100
Mirex	2.1	21
Pentachlorophenol	1.7	17
Polychlorinated biphenyls (PCBs)	5.0	50
Toxaphene	0.5	5
Trichloroethylene	204	2,040
2,4,5-Trichlorophenoxypropionic acid	1.0	10